## 2020 - 2021 Major Map

**Applied Mathematics for Life and Social Sciences, BS**

**School/College:** The College of Liberal Arts and Sciences  
**Location:** Tempe campus  

**LAAMLBS**

### Term 1 - 0 - 15 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
</table>
| AML 100: Introduction to Applied Mathematics for the Life and Social Sciences (MA) | 3 | C | - An SAT, ACT, Accuplacer, IELTS, or TOEFL score determines placement into first-year composition courses  
- Mathematics Placement Assessment score determines placement in mathematics course and eligibility for AML 100  
- ASU 101 or college-specific equivalent  
- First-Year Seminar required of all first-year students.  
- Minimum grade of C required in all MAT and STP classes; grade of B or better strongly correlated with timely graduation.  
- Select your career interest area.  
- me3@ASU  
- Create a first draft resume. |
| BIO 181: General Biology I (SQ) | 4 | C | |
| ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: First-Year Composition | 3 | C | |
| LIA 101: Student Success in The College of Liberal Arts and Sciences | 1 |  |
| MAT 270: Calculus with Analytic Geometry I (MA) | 4 | C | |
| Minimum 2.00 GPA in STP and MAT. | | | |

Term hours subtotal: 15

### Term 2 - 15 - 32 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
</table>
| CSE 100: Principles of Programming with C++ (CS) OR CSE 110: Principles of Programming (CS) | 3 | C | - Minimum grade of C required in all MAT and STP classes; grade of B or better strongly correlated with timely graduation.  
- Use the SB course in this term as a prerequisite for upper-division work in the Social Science track. Recommended courses are found in track list below.  
- Build your professional connections -- join the ASU Mentor Network.  
- Join a student club or professional organization. |
| BIO 182: General Biology II (SG) | 4 | C | |
| ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: First-Year Composition | 3 | C | |
| MAT 271: Calculus with Analytic Geometry II (MA) | 4 | C | |
| Social-Behavioral Sciences (SB) | 3 |  |
| Complete ENG 101 OR ENG 105 OR ENG 107 course(s). | | | |
| Minimum 2.00 GPA in STP and MAT. | | | |

Term hours subtotal: 17

### Term 3 - 32 - 48 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
</table>
| MAT 272: Calculus with Analytic Geometry III (MA) | 4 | C | - Minimum grade of C required in all MAT and STP classes; grade of B or better strongly correlated with timely graduation.  
- Secure a part-time job or volunteer experience.  
- Develop your skills. |
| Science and Society Elective | 3 | C | |
| Global Awareness (G) | 3 |  |
| Humanities, Arts and Design (HU) AND Cultural Diversity in the U.S. (C) | 3 |  |
| Literacy and Critical Inquiry (L) | 3 |  |
| Complete First-Year Composition requirement. | | | |
| Complete Mathematics (MA) requirement. | | | |
| Minimum 2.00 GPA in STP and MAT. | | | |

Term hours subtotal: 16
### Term 4 48 - 63 Credit Hours

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>AML 253: Introduction to Mathematical Tools and Modeling for the Life and Social Sciences</td>
<td>3</td>
<td>C</td>
<td>• Minimum grade of C required in all MAT and STP classes; grade of B or better strongly correlated with timely graduation.</td>
</tr>
<tr>
<td>MAT 274: Elementary Differential Equations (MA) OR MAT 275: Modern Differential Equations (MA)</td>
<td>3</td>
<td>C</td>
<td>• Use the SB course in this term to complete a prerequisite for upper-division work in the Social Science track. Recommended courses are found in the track list below.</td>
</tr>
<tr>
<td>STP 420: Introductory Applied Statistics (CS)</td>
<td>3</td>
<td>C</td>
<td>• Explore an internship.</td>
</tr>
<tr>
<td>Social-Behavioral Sciences (SB)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Minimum 2.00 GPA in STP and MAT.

Term hours subtotal: **15**

### Term 5 63 - 78 Credit Hours

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Division Life Science course</td>
<td>3</td>
<td>C</td>
<td>• Minimum grade of C required in all MAT and STP classes; grade of B or better strongly correlated with timely graduation.</td>
</tr>
<tr>
<td>Upper Division Social Science course</td>
<td>3</td>
<td>C</td>
<td>• Develop your professional online presence.</td>
</tr>
<tr>
<td>STP 421: Probability</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Humanities, Arts and Design (HU) AND Historical Awareness (H)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Minimum 2.00 GPA in STP and MAT.

Term hours subtotal: **15**

### Term 6 78 - 93 Credit Hours

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 342: Linear Algebra OR MAT 343: Applied Linear Algebra</td>
<td>3</td>
<td>C</td>
<td>• Research employment opportunities.</td>
</tr>
<tr>
<td>Upper Division Applied Mathematics course</td>
<td>3</td>
<td>C</td>
<td>• Complete an in person or virtual practice interview.</td>
</tr>
<tr>
<td>Upper Division Life Science course</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Upper Division Elective OR ASB 484: Internship</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete Cultural Diversity in the U.S. (C) AND Global Awareness (G) AND Historical Awareness (H) course(s).</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Minimum 2.00 GPA in STP and MAT.

Term hours subtotal: **15**

### Term 7 93 - 108 Credit Hours

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Division Applied Mathematics course</td>
<td>3</td>
<td>C</td>
<td>• Gather professional references.</td>
</tr>
<tr>
<td>Upper Division Social Science course</td>
<td>3</td>
<td>C</td>
<td>• Apply for full-time career opportunities.</td>
</tr>
<tr>
<td>Upper Division Science and Society Elective</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Upper Division Humanities, Arts and Design (HU) OR Upper Division Social-Behavioral Sciences (SB)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Upper Division Literacy and Critical Inquiry (L)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Minimum 2.00 GPA in STP and MAT.

Term hours subtotal: **15**

### Term 8 108 - 120 Credit Hours

<table>
<thead>
<tr>
<th>Course Description</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>AML 406: Directed Reading and Research in Applied Mathematics for the Life and Social Sciences</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Upper Division Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Complete 2 courses:</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum 2.00 GPA in STP and MAT.</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Term hours subtotal:</td>
<td>12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- All students pursuing a BS or BSP degree in The College of Liberal Arts and Sciences must complete two courses from the Science and Society list found at [https://thecollege.asu.edu/resources/science-society](https://thecollege.asu.edu/resources/science-society). At least one of the two courses must be upper-division and students must earn a C or better in the courses. Both Science and Society courses (i.e., all six credits) may count towards any major, minor, related fields, and ASU General Studies requirements.

<table>
<thead>
<tr>
<th>Recommended SB courses</th>
<th>Upper Division Life Science</th>
<th>Upper Division Social Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASB 102: Introduction to Cultural Anthropology (SB &amp; G)</td>
<td>AML 394: From Cells to Societies or ASB 394: From Cells to Societies or SOS 394: From Cells to Societies</td>
<td>ASB 316: Money and Culture (L or SB)</td>
</tr>
<tr>
<td>CDE 232: Human Development (SB)</td>
<td>AML 394: Modeling Simulation Neglected Tropical Diseases</td>
<td>ASB 394: Statistics for Social Scientists</td>
</tr>
<tr>
<td>JUS 105: Introduction to Justice Studies (SB)</td>
<td>ASB 494: Applied Epidemiology</td>
<td>ASM 345: Disease and Human Evolution</td>
</tr>
<tr>
<td>PSY 101: Introduction to Psychology (SB)</td>
<td>BIO 302: Cancer—Mother of All Diseases (L)</td>
<td>ASM 494: Bayesian Statistics in Theory and Practice</td>
</tr>
<tr>
<td>SOC 101: Introductory Sociology (SB)</td>
<td>BIO 321: Introductory Ecology Laboratory</td>
<td>GCU 351: Population Geography (SB &amp; G)</td>
</tr>
<tr>
<td></td>
<td>BIO 415: Biometry (CS)</td>
<td>GIS 461: Fundamentals of Spatial Optimization or PUP 481: Fundamentals of Spatial Optimization</td>
</tr>
<tr>
<td></td>
<td>BMI 465: Introduction to Comparative Genomics</td>
<td>JUS 301: Research in Justice Studies (SB)</td>
</tr>
<tr>
<td></td>
<td>HCD 300: Biostatistics (CS) or PBH 300: Biostatistics (CS)</td>
<td>JUS 302: Statistical Analysis for Justice Studies (CS)</td>
</tr>
<tr>
<td>Upper Division Applied Mathematics</td>
<td></td>
<td>POS 401: Political Statistics (CS) or SGS 401: Political Statistics (CS)</td>
</tr>
<tr>
<td>AML 441: Mathematical Concepts and Tools in Sustainability</td>
<td></td>
<td>SOC 331: Environmental Sociology (SB &amp; G)</td>
</tr>
<tr>
<td></td>
<td>AML 494: Modeling with Game Theory</td>
<td>SOC 390: Social Statistics I (CS)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SOC 391: Research Methods (L or SB)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SOC 448: Epidemics and Society (SB &amp; G)</td>
</tr>
</tbody>
</table>
Notes:
- Please keep in mind that the applicability of a specific transfer course toward an ASU degree program depends on the requirements of the department, division, college or school in which you are enrolled at ASU. Transfer agreements that guarantee the completion of university level requirements do not necessarily meet college and major requirements. Please consult with an advisor for more information.

**Total Hours:** 120
**Upper Division Hours:** 45 minimum
**Major GPA:** 2.00 minimum
**Cumulative GPA:** 2.00 minimum
**Total hrs at ASU:** 30 minimum
**Hrs Resident Credit for Academic Recognition:** 56 minimum
**Total Community College Hrs:** 64 maximum
**Total College Residency Hrs:** 12 minimum

**General University Requirements Legend**

General Studies Core Requirements:
- Literacy and Critical Inquiry (L)
- Mathematical Studies (MA)
- Computer/Statistics/Quantitative Applications (CS)
- Humanities, Arts and Design (HU)
- Social-Behavioral Sciences (SB)
- Natural Science - Quantitative (SQ)
- Natural Science - General (SG)

General Studies Awareness Requirements:
- Cultural Diversity in the U.S. (C)
- Global Awareness (G)
- Historical Awareness (H)

First-Year Composition

General Studies designations listed on the major map are current for the 2020 - 2021 academic year.